WHAT IS CLAIMED IS:

1. A method for processing imagery using an Electro-Optical (EO) system, comprising the steps of:

selecting a first frame of data as a template frame;

capturing a second frame of data using the EO system;

correlating at least a portion of the second frame with the template frame to generate a shift vector;

registering the second frame with the template frame by interpolating the second frame using the shift vector and re-sampling at least a portion of the second frame to produce a registered frame;

re-sampling the template frame; and

combining the re-sampled template frame and the registered frame to generate an averaged frame.

2. The method of claim 1, wherein the step of registering the second frame uses bilinear interpolation.

3. The method of claim 1, comprising the step of:

adding motion to a line of sight of the EO system using a commanded line of sight pattern or a random pattern to generate multiple frames of data.

4. The method of claim 1, comprising the step of:

spatially filtering the averaged frame to enhance edges within the averaged frame.

5. The method of claim 1, comprising the step of:

utilizing a histogram projection to change a pixel depth of the averaged frame.

6. The method of claim 1, comprising the step of:

re-sampling the averaged frame.

7. The method of claim 6, wherein the step of re-sampling the averaged frame uses bilinear interpolation.

8. The method of claim 1, comprising the steps of:

capturing a first frame of data using the EO system; and

temporally filtering at least the first frame to generate the template frame.

9. The method of claim 8, wherein the step of re-sampling the first frame uses bilinear interpolation.

10. An Electro-Optical (EO) system for processing imagery, comprising:

a sensor for generating input data; and

a processor module coupled to the sensor, the processor module configured to:

select a first frame of data as a template frame;

capture a second frame of data using the EO system;

correlate at least a portion of the second frame with the template frame to generate a shift vector;

register the second frame with the template frame by interpolating the second frame using the shift vector and re-sampling at least a portion of the second frame to produce a registered frame;

re-sample the template frame; and

combine the re-sampled template frame and the registered frame to generate an averaged frame.

11. The EO system of claim 10, wherein the processor, in registering the second frame, is configured to use bilinear interpolation.

12. The EO system of claim 10, wherein the processor module is configured to:

add motion to a line of sight of the EO system using a commanded line of sight pattern or a random pattern to generate multiple frames of data.

13. The EO system of claim 10, wherein the processor module is configured to:

spatially filter the averaged frame to enhance edges within the averaged frame.

14. The EO system of claim 10, wherein the processor module is configured to:

utilize a histogram projection to change a pixel depth of the averaged frame.

15. The EO system of claim 10, wherein the processor module is configured to:

re-sample the averaged frame.

16. The EO system of claim 15, wherein the processor, in re-sampling the averaged frame, is configured to use bilinear interpolation.

17. The EO system of claim 10, wherein the processor module is configured to:

capture a first frame of data using the EO system; and

temporally filter at least the first frame to generate the template frame.

18. The EO system of claim 17, wherein the processor, in re-sampling the first frame, is further configured to use bilinear interpolation.